

**REMARKS**

Claims 1-21 are pending in this application. By this Amendment, claim 1 is amended, claim 21 is added and the original drawings are replaced with the attached replacement sheets, which include formal versions of the original drawings. Claim 1 is amended to more clearly distinguish over the applied reference, as will be discussed below.

The Office Action indicated that formal drawings will be required. The attached replacement sheets provide formal drawings.

Applicant notes with appreciation the identification of allowable subject matter in claims 4-8 and 13. Independent claim 21, which is added in this Amendment, corresponds to original claims 1 and 13 combined. Thus, claim 21 is in condition for allowance. Applicant respectfully submits that all pending claims are in condition for allowance as discussed below.

Claims 1-3, 9-12 and 14-20 stand rejected under 35 U.S.C. §103(a) over U.S. Patent No. 6,496,306 to Shafer et al. This rejection is respectfully traversed.

Independent claim 1 has been amended to clarify that the projection optical system has no reflective surfaces in the optical path between the first surface and the second surface. Thus, the projection optical system according to amended claim 1 is a purely refractive (also referred to as a dioptric) optical system.

Shafer et al. discloses a catadioptric optical system in which reflective members (i.e., mirrors) DM1, DM2 and a concave mirror (for example, mirror 209 in Fig. 2) are provided between the first surface (object O or mask 3) and the second surface (image IM or substrate 5). Also see, for example, the title, abstract, and entire specification (for example, col. 1, lines 13-15, col. 2, lines 7-8, col. 3, lines 42-44, col. 5, lines 29-30, etc.) of Shafer et al. Thus, claim 1 is clearly distinguished from Shafer et al. with respect to the principle of correcting aberrations. Shafer et al. does not disclose or suggest providing the purely

refractive projection optical system recited in independent claim 1. Accordingly, independent claim 1 along with its dependent claims are patentable over Shafer et al.

Withdrawal of the rejection over Shafer et al. is requested.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe anything further would be desirable to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number set forth below.

Respectfully submitted,



Mario A. Costantino  
Registration No. 33,565

MAC/ccs

Attachments:

Drawing Replacement Sheets  
Petition for Extension of Time  
Amendment Transmittal

Date: August 6, 2003

**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

<p><b>DEPOSIT ACCOUNT USE AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
---